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 NEWS  1           Web Page for STN Seminar Schedule - N. America
 NEWS  2  AUG 06   CAS REGISTRY enhanced with new experimental property tags
 NEWS  3  AUG 06   FSTA enhanced with new thesaurus edition
 NEWS  4  AUG 13   CA/CAplus enhanced with additional kind codes for granted
                   patents
 NEWS  5  AUG 20   CA/CAplus enhanced with CAS indexing in pre-1907 records
 NEWS  6  AUG 27   Full-text patent databases enhanced with predefined
                   patent family display formats from INPADOCDB
 NEWS  7  AUG 27   USPATOLD now available on STN
 NEWS  8  AUG 28   CAS REGISTRY enhanced with additional experimental
                   spectral property data
 NEWS  9  SEP 07   STN AnaVist, Version 2.0, now available with Derwent
                   World Patents Index
 NEWS 10  SEP 13   FORIS renamed to SOFIS
 NEWS 11  SEP 13   INPADOCDB enhanced with monthly SDI frequency
 NEWS 12  SEP 17   CA/CAplus enhanced with printed CA page images from
                   1967-1998
 NEWS 13  SEP 17   CAplus coverage extended to include traditional medicine
                   patents
 NEWS 14  SEP 24   EMBASE, EMBAL, and LEMBASE reloaded with enhancements
 NEWS 15  OCT 02   CA/CAplus enhanced with pre-1907 records from Chemisches
                   Zentralblatt
 NEWS 16  OCT 19   BEILSTEIN updated with new compounds
 NEWS 17  NOV 15   Derwent Indian patent publication number format enhanced
 NEWS 18  NOV 19   WPIX enhanced with XML display format
 NEWS 19  NOV 30   ICSD reloaded with enhancements
 NEWS 20  DEC 04   LINPADOCDB now available on STN
 NEWS 21  DEC 14   BEILSTEIN pricing structure to change
 NEWS 22  DEC 17   USPATOLD added to additional database clusters
 NEWS 23  DEC 17   IMSDRUGCONF removed from database clusters and STN
 NEWS 24  DEC 17   DGENE now includes more than 10 million sequences
 NEWS 25  DEC 17   TOXCENTER enhanced with 2008 MeSH vocabulary in
                   MEDLINE segment
 NEWS 26  DEC 17   MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary
 NEWS 27  DEC 17   CA/CAplus enhanced with new custom IPC display formats
 NEWS 28  DEC 17   STN Viewer enhanced with full-text patent content
                   from USPATOLD
 NEWS 29  JAN 02   STN pricing information for 2008 now available

 NEWS EXPRESS  19 SEPTEMBER 2007:  CURRENT WINDOWS VERSION IS V8.2,
               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 19 SEPTEMBER 2007.

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FILE 'HOME' ENTERED AT 10:19:49 ON 07 JAN 2008

=> file medline, biosis
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.84	0.84

FILE 'MEDLINE' ENTERED AT 10:21:53 ON 07 JAN 2008

FILE 'BIOSIS' ENTERED AT 10:21:53 ON 07 JAN 2008
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=> s (quorum sensing) and (inter species)
L1 17 (QUORUM SENSING) AND (INTER SPECIES)

=> s l1 and (inducer)
L2 2 L1 AND (INDUCER)

=> s l1 and (AI-2)
L3 9 L1 AND (AI-2)

=> s l2 ti abs ibib tot
MISSING OPERATOR L2 TI
The search profile that was entered contains terms or nested terms that are not separated by a logical operator.

=> d his

(FILE 'HOME' ENTERED AT 10:19:49 ON 07 JAN 2008)

FILE 'MEDLINE, BIOSIS' ENTERED AT 10:21:53 ON 07 JAN 2008
L1 17 S (QUORUM SENSING) AND (INTER SPECIES)
L2 2 S L1 AND (INDUCER)
L3 9 S L1 AND (AI-2)

=> d l2 ti abs ibib tot

L2 ANSWER 1 OF 2 MEDLINE on STN
TI Evidence for quorum sensing in Clostridium botulinum 56A.
AB AIMS: Experiments were designed to detect quorum-sensing signals produced by Clostridium botulinum. METHODS AND RESULTS: Clostridium botulinum 56A cell-free supernatants obtained at the end of lag phase, the mid-exponential phase and early stationary phase of growth were assayed for bioluminescence in the Vibrio harveyi quorum-sensing assay system. Twelve and 16-h culture supernatants induced bioluminescence in the auto-inducer 2 (AI-2) but not the auto-inducer 1 (AI-1) assay. Intra-species quorum sensing was also assayed as the ability of the supernatants to promote spore germination and outgrowth in a microtitre plate system. Spore populations exposed to C. botulinum supernatant from the end of lag phase became positive for growth sooner than controls. CONCLUSIONS: The influence of cell-free supernatant on ungerminated spores and detection of bioluminescence in the AI-2 assay are evidence for a signalling

molecule(s) and provide a first step in characterizing C. botulinum quorum sensing. SIGNIFICANCE AND IMPACT OF THE STUDY: This study suggests that spores do not behave independently of each other and may explain the inocula size effects observed in challenge studies. Whether AI-2 production in C. botulinum serves as an inter-species signal or as a detoxification mechanism remains to be determined.

ACCESSION NUMBER: 2006027455 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16411920
TITLE: Evidence for quorum sensing in Clostridium botulinum 56A.
AUTHOR: Zhao L; Montville T J; Schaffner D W
CORPORATE SOURCE: Department of Food Science, Cook College, The New Jersey Agricultural Experiment Station, Rutgers, The State University of New Jersey, New Brunswick, NJ 08901-8520, USA.
SOURCE: Letters in applied microbiology, (2006 Jan) Vol. 42, No. 1, pp. 54-8.
Journal code: 8510094. ISSN: 0266-8254.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200608
ENTRY DATE: Entered STN: 18 Jan 2006
Last Updated on STN: 1 Sep 2006
Entered Medline: 31 Aug 2006

L2 ANSWER 2 OF 2 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Evidence for quorum sensing in Clostridium botulinum 56A.
AB Aims: Experiments were designed to detect quorum-sensing signals produced by Clostridium botulinum.Methods and Results: Clostridium botulinum 56A cell-free supernatants obtained at the end of lag phase, the mid-exponential phase and early stationary phase of growth were assayed for bioluminescence in the Vibrio harveyi quorum-sensing assay system. Twelve and 16-h culture supernatants induced bioluminescence in the auto-inducer 2 (AI-2) but not the auto-inducer 1 (AI-1) assay. Intra-species quorum sensing was also assayed as the ability of the supernatants to promote spore germination and outgrowth in a microtitre plate system. Spore populations exposed to C. botulinum supernatant from the end of lag phase became positive for growth sooner than controls.Conclusions: The influence of cell-free supernatant on ungerminated spores and detection of bioluminescence in the AI-2 assay are evidence for a signalling molecule(s) and provide a first step in characterizing C. botulinum quorum sensing.Significance and Impact of the Study: This study suggests that spores do not behave independently of each other and may explain the inocula size effects observed in challenge studies. Whether AI-2 production in C. botulinum serves as an inter-species signal or as a detoxification mechanism remains to be determined.

ACCESSION NUMBER: 2006:192980 BIOSIS
DOCUMENT NUMBER: PREV200600190507
TITLE: Evidence for quorum sensing in Clostridium botulinum 56A.
AUTHOR(S): Zhao, L.; Montville, T. J. [Reprint Author]; Schaffner, D. W.
CORPORATE SOURCE: Rutgers State Univ, New Jersey Agr Expt Stn, Cook Coll, Dept Food Sci, 65 Dudley Rd, New Brunswick, NJ 08901 USA montville@aesop.rutgers.edu
SOURCE: Letters in Applied Microbiology, (JAN 2006) Vol. 42, No. 1, pp. 54-58.

CODEN: LAMIE7. ISSN: 0266-8254.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 15 Mar 2006
Last Updated on STN: 15 Mar 2006

=> d his

(FILE 'HOME' ENTERED AT 10:19:49 ON 07 JAN 2008)

FILE 'MEDLINE, BIOSIS' ENTERED AT 10:21:53 ON 07 JAN 2008
L1 17 S (QUORUM SENSING) AND (INTER SPECIES)
L2 2 S L1 AND (INDUCER)
L3 9 S L1 AND (AI-2)

=> d l3 ti abs ibib tot

L3 ANSWER 1 OF 9 MEDLINE on STN
TI Evidence for quorum sensing in Clostridium botulinum 56A.
AB AIMS: Experiments were designed to detect quorum-sensing signals produced by Clostridium botulinum. METHODS AND RESULTS: Clostridium botulinum 56A cell-free supernatants obtained at the end of lag phase, the mid-exponential phase and early stationary phase of growth were assayed for bioluminescence in the Vibrio harveyi quorum-sensing assay system. Twelve and 16-h culture supernatants induced bioluminescence in the auto-inducer 2 (AI-2) but not the auto-inducer 1 (AI-1) assay. Intra-species quorum sensing was also assayed as the ability of the supernatants to promote spore germination and outgrowth in a microtitre plate system. Spore populations exposed to C. botulinum supernatant from the end of lag phase became positive for growth sooner than controls. CONCLUSIONS: The influence of cell-free supernatant on ungerminated spores and detection of bioluminescence in the AI-2 assay are evidence for a signalling molecule(s) and provide a first step in characterizing C. botulinum quorum sensing. SIGNIFICANCE AND IMPACT OF THE STUDY: This study suggests that spores do not behave independently of each other and may explain the inocula size effects observed in challenge studies. Whether AI-2 production in C. botulinum serves as an inter-species signal or as a detoxification mechanism remains to be determined.
ACCESSION NUMBER: 2006027455 MEDLINE
DOCUMENT NUMBER: PubMed ID: 16411920
TITLE: Evidence for quorum sensing in Clostridium botulinum 56A.
AUTHOR: Zhao L; Montville T J; Schaffner D W
CORPORATE SOURCE: Department of Food Science, Cook College, The New Jersey Agricultural Experiment Station, Rutgers, The State University of New Jersey, New Brunswick, NJ 08901-8520, USA.
SOURCE: Letters in applied microbiology, (2006 Jan) Vol. 42, No. 1, pp. 54-8.
Journal code: 8510094. ISSN: 0266-8254.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200608
ENTRY DATE: Entered STN: 18 Jan 2006
Last Updated on STN: 1 Sep 2006
Entered Medline: 31 Aug 2006

L3 ANSWER 2 OF 9 MEDLINE on STN
TI Autoinducer 2 activity in Escherichia coli culture supernatants can be actively reduced despite maintenance of an active synthase, LuxS.
AB Production of the signalling molecule (autoinducer-2) synthesized by LuxS has been proposed to be pivotal to a universal mechanism of inter -species bacterial cell-cell communication (quorum sensing); however recently the function of LuxS has been noted to be integral to central metabolism since it contributes to the activated methyl cycle. This paper shows that when Helicobacter pylori LuxS is overproduced in Escherichia coli, it forms cross-linkable multimers. These multimers persist at comparable levels after 24 h of growth if glucose is omitted from the growth medium; however, the levels of extracellular autoinducer-2 decline (Glucose Retention of AI-2 Levels: GRAIL). Glycerol, maltose, galactose, ribose and L-arabinose could substitute for glucose, but lactose, D-arabinose, acetate, citrate and pyruvate could not. Mutations in (i). metabolic pathways (glycolytic enzymes eno, pgk, pgm; galactose epimerase; the Pta-AckA pathway), (ii). sugar transport (pts components, rbs operon, mgl, trg), and (iii). regulators involved in conventional catabolic repression (crp, cya), cAMP-independent catabolite repression (creC, fruR, rpoS,) the stringent response (relA, spoT) and the global carbon storage regulator (csrA) did not prevent GRAIL. Although the basis of GRAIL remains uncertain, it is clear that the mechanism is distinct from conventional catabolite repression. Moreover, GRAIL is not due to inactivation of the enzymic activity of LuxS, since in E. coli, LuxS contained within stationary-phase cells grown in the absence of glucose maintains its activity in vitro.
ACCESSION NUMBER: 2003120713 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12634340
TITLE: Autoinducer 2 activity in Escherichia coli culture supernatants can be actively reduced despite maintenance of an active synthase, LuxS.
AUTHOR: Hardie Kim R; Cooksley Clare; Green Andrew D; Winzer Klaus
CORPORATE SOURCE: Institute of Infections and Immunity, Queen's Medical Centre, C-Floor, West Block, Nottingham NG7 2UH, UK.. kim.hardie@nottingham.ac.uk
SOURCE: Microbiology (Reading, England), (2003 Mar) Vol. 149, No. Pt 3, pp. 715-28.
Journal code: 9430468. ISSN: 1350-0872.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200306
ENTRY DATE: Entered STN: 14 Mar 2003
Last Updated on STN: 11 Jun 2003
Entered Medline: 10 Jun 2003

L3 ANSWER 3 OF 9 MEDLINE on STN
TI Structural identification of a bacterial quorum-sensing signal containing boron.
AB Cell-cell communication in bacteria is accomplished through the exchange of extracellular signalling molecules called autoinducers. This process, termed quorum sensing, allows bacterial populations to coordinate gene expression. Community cooperation probably enhances the effectiveness of processes such as bioluminescence, virulence factor expression, antibiotic production and biofilm development. Unlike other autoinducers, which are specific to a particular species of bacteria, a recently discovered autoinducer (AI-2) is produced by a large number of bacterial species. AI-2 has been proposed to serve as a 'universal' signal for inter-species communication. The chemical identity of AI-2 has, however, proved elusive. Here we present the crystal

structure of an AI-2 sensor protein, LuxP, in a complex with autoinducer. The bound ligand is a furanosyl borate diester that bears no resemblance to previously characterized autoinducers. Our findings suggest that addition of naturally occurring borate to an AI-2 precursor generates active AI-2 . Furthermore, they indicate a potential biological role for boron, an element required by a number of organisms but for unknown reasons.

ACCESSION NUMBER: 2002099466 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11823863
TITLE: Structural identification of a bacterial quorum-sensing signal containing boron.
AUTHOR: Chen Xin; Schauder Stephan; Potier Noelle; Van Dorsselaer Alain; Pelczer Istvan; Bassler Bonnie L; Hughson Frederick M
CORPORATE SOURCE: Department of Molecular Biology, Princeton University, Princeton, New Jersey 08544-1014, USA.
SOURCE: Nature, (2002 Jan 31) Vol. 415, No. 6871, pp. 545-9. Journal code: 0410462. ISSN: 0028-0836.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T) (RESEARCH SUPPORT, U.S. GOV'T, NON-P.H.S.) (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200203
ENTRY DATE: Entered STN: 7 Feb 2002
Last Updated on STN: 13 Mar 2002
Entered Medline: 12 Mar 2002

L3 ANSWER 4 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Evidence for quorum sensing in Clostridium botulinum 56A.
AB Aims: Experiments were designed to detect quorum-sensing signals produced by Clostridium botulinum.Methods and Results: Clostridium botulinum 56A cell-free supernatants obtained at the end of lag phase, the mid-exponential phase and early stationary phase of growth were assayed for bioluminescence in the Vibrio harveyi quorum-sensing assay system. Twelve and 16-h culture supernatants induced bioluminescence in the auto-inducer 2 (AI-2) but not the auto-inducer 1 (AI-1) assay. Intra-species quorum sensing was also assayed as the ability of the supernatants to promote spore germination and outgrowth in a microtitre plate system. Spore populations exposed to C. botulinum supernatant from the end of lag phase became positive for growth sooner than controls.Conclusions: The influence of cell-free supernatant on ungerminated spores and detection of bioluminescence in the AI-2 assay are evidence for a signalling molecule(s) and provide a first step in characterizing C. botulinum quorum sensing.Significance and Impact of the Study: This study suggests that spores do not behave independently of each other and may explain the inocula size effects observed in challenge studies. Whether AI-2 production in C. botulinum serves as an inter-species signal or as a detoxification mechanism remains to be determined.
ACCESSION NUMBER: 2006:192980 BIOSIS
DOCUMENT NUMBER: PREV200600190507
TITLE: Evidence for quorum sensing in Clostridium botulinum 56A.
AUTHOR(S): Zhao, L.; Montville, T. J. [Reprint Author]; Schaffner, D. W.
CORPORATE SOURCE: Rutgers State Univ, New Jersey Agr Expt Stn, Cook Coll, Dept Food Sci, 65 Dudley Rd, New Brunswick, NJ 08901 USA montville@aesop.rutgers.edu
SOURCE: Letters in Applied Microbiology, (JAN 2006) Vol. 42, No. 1,

pp. 54-58.
CODEN: LAMIE7. ISSN: 0266-8254.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 15 Mar 2006
Last Updated on STN: 15 Mar 2006

L3 ANSWER 5 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Modulation of Pseudomonas aeruginosa gene expression by host microflora through interspecies communication.
AB The change in gene expression patterns in response to host environments is a prerequisite for bacterial infection. Bacterial diseases often occur as an outcome of the complex interactions between pathogens and the host. The indigenous, usually non-pathogenic microflora is a ubiquitous constituent of the host. In order to understand the interactions between pathogens and the resident microflora and how they affect the gene expression patterns of the pathogens and contribute to bacterial diseases, the interactions between pathogenic Pseudomonas aeruginosa and aviruient oropharyngeal flora (OF) strains isolated from sputum samples of cystic fibrosis (CF) patients were investigated. Animal experiments using a rat lung infection model indicate that the presence of OF bacteria enhanced lung damage caused by P. aeruginosa. Genome-wide transcriptional analysis with a lux reporter-based promoter library demonstrated that apprxeq4% of genes in the genome responded to the presence of OF strains using an in vitro system. Characterization of a subset of the regulated genes indicates that they fall into seven functional classes, and large portions of the upregulated genes are genes important for P. aeruginosa pathogenesis. Autoinducer-2 (AI-2)-mediated quorum sensing, a proposed inter-species signalling system, accounted for some, but not all, of the gene regulation. A substantial amount of AI-2 was detected directly in sputum samples from CF patients and in cultures of most non-pseudomonad bacteria isolated from the sputa. Transcriptional profiling of a set of defined P. aeruginosa virulence factor promoters revealed that OF and exogenous AI-2 could upregulate overlapping subsets of these genes. These results suggest important contributions of the host microflora to P. aeruginosa infection by modulating gene expression via interspecies communications.
ACCESSION NUMBER: 2004:39144 BIOSIS
DOCUMENT NUMBER: PREV200400031312
TITLE: Modulation of Pseudomonas aeruginosa gene expression by host microflora through interspecies communication.
AUTHOR(S): Duan, Kangmin; Dammel, Carol; Stein, Jeffrey; Rabin, Harvey; Surette, Michael G. [Reprint Author]
CORPORATE SOURCE: Department of Microbiology and Infectious Diseases, University of Calgary, Calgary, AB, T2N 4N1, Canada surette@ucalgary.ca
SOURCE: Molecular Microbiology, (December 2003) Vol. 50, No. 5, pp. 1477-1491. print.
ISSN: 0950-382X (ISSN print).
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 7 Jan 2004
Last Updated on STN: 7 Jan 2004

L3 ANSWER 6 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI AI-2 mediated signaling in the microbial community in the lungs of cystic fibrosis patients.
AB Background: Chronic bacterial infection, predominantly by the opportunistic pathogen Pseudomonas aeruginosa causes the majority of morbidity and mortality in patients with cystic fibrosis (CF). In addition to P. aeruginosa, a variety of other microorganisms are often found in CF lungs. In this microbial community, quorum-sensing systems, which are important for bacterial gene regulation

and biofilm development, play important roles. AI-2 mediated quorum sensing has been suggested to be an inter-species signaling system and has been linked to bacterial virulence in a number of diverse bacteria. We examined the presence of AI-2 in the lungs of CF patients, and investigated the roles of AI-2 in the complex microbial community in the CF lungs. Methods: The Vibrio harveyi reporter system was used to detect AI-2 in sputum samples from CF patients and to measure the production of AI-2 by the non-pseudomonad bacterial isolates. A rat lung chronic infection model was used to examine the effect of AI-2 on P. aeruginosa pathogenesis. Effect of AI-2 on P. aeruginosa virulence factor was tested using lux-based expression profiling. Results: AI-2 was found in most of the sputum samples from CF patients, and all the bacterium isolates were able to produce AI-2. Animal experiment data indicate that AI-2 produced by non-pseudomonad bacteria could enhance lung damage caused by P. aeruginosa, and AI-2 could regulate the expression of P. aeruginosa virulence factor genes. Conclusions: These results highlight the contribution of microbial interactions to the pathogenicity of P. aeruginosa via gene modulation and the potential of targeting such interactions to develop new antimicrobial agents.

ACCESSION NUMBER: 2004:24118 BIOSIS
DOCUMENT NUMBER: PREV200400025412
TITLE: AI-2 mediated signaling in the microbial community in the lungs of cystic fibrosis patients.
AUTHOR(S): Duan, K. [Reprint Author]; Duplisea, R. [Reprint Author]; Dammel, C.; Rabin, H. [Reprint Author]; Stein, J. [Reprint Author]; Surette, M. [Reprint Author]
CORPORATE SOURCE: University of Calgary, Calgary, AB, Canada
SOURCE: Abstracts of the Interscience Conference on Antimicrobial Agents and Chemotherapy, (2003) Vol. 43, pp. 66. print. Meeting Info.: 43rd Annual Interscience Conference on Antimicrobial Agents and Chemotherapy. Chicago, IL, USA. September 14-17, 2003. American Society for Microbiology.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 31 Dec 2003
Last Updated on STN: 31 Dec 2003

L3 ANSWER 7 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Inhibition of quorum sensing in Clostridium perfringens as a means toward food safety.
AB Cell density-dependent signaling through the use of autoinducers, classified as quorum sensing, may play a role in the survival and virulence of Clostridium perfringens in foods. The natural 2-(5H)-furanone, ascorbic acid (vitamin C), was chosen for evaluation as a quorum sensing analogue due to its structural similarity to autoinducer-2 (AI-2), a universal signal for inter-species communication. Ascorbic acid has been reported to have antimicrobial properties in meat, and it can be added to meat at concentrations up to 0.75 oz/100 lbs (30mM). Ascorbic acid inhibition of C. perfringens AI-2 production, growth, sporulation, and enterotoxin (CPE) production was measured following addition to cooked, 93% lean, supermarket ground beef using a Vibrio harveyi luminescence assay. Measured AI-2 production from C. perfringens in ground beef filtrates decreased from 14.6 million relative light units (RLU) at 0 mM ascorbic acid to 8.3 million RLU at 10 mM ascorbic acid to 0.1 million RLU at 30 mM ascorbic acid. To verify that this was not a result of assay inhibition due to lowering of the pH by ascorbic acid, sodium ascorbate, a non-acidic salt of ascorbic acid,

was tested resulting in similar reductions in RLUs despite the absence of pH variations. Total spore production in sporulation medium ranged from 6.83 log10 spores/ml (0 mM ascorbic acid) to 1.37 log10 spores/ml (10 mM ascorbic acid). Western immunoblot analyses of SDS-PAGE gels containing cell lysates from C. perfringens indicated highest CPE levels after 24 h at 37degreeC and decreased turn-over of CPE over time in the presence of 10 or 30 mM ascorbic acid. This study demonstrates the potential application of ascorbic acid as a quorum sensing inhibitor for controlling pathogen levels in foods.

ACCESSION NUMBER: 2003:532236 BIOSIS
DOCUMENT NUMBER: PREV200300534260
TITLE: Inhibition of quorum sensing in Clostridium perfringens as a means toward food safety.
AUTHOR(S): Novak, J. S. [Reprint Author]
CORPORATE SOURCE: USDA, Wyndmoor, PA, USA
SOURCE: Abstracts of the General Meeting of the American Society for Microbiology, (2003) Vol. 103, pp. P-084. http://www.asmusa.org/mtgsrc/generalmeeting.htm. cd-rom. Meeting Info.: 103rd American Society for Microbiology General Meeting. Washington, DC, USA. May 18-22, 2003. American Society for Microbiology. ISSN: 1060-2011 (ISSN print).
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Nov 2003
Last Updated on STN: 12 Nov 2003

L3 ANSWER 8 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Autoinducer 2 activity in Escherichia coli culture supernatants can be actively reduced despite maintenance of an active synthase, LuxS.
AB Production of the signalling molecule (autoinducer-2) synthesized by LuxS has been proposed to be pivotal to a universal mechanism of inter-species bacterial cell-cell communication (quorum sensing); however recently the function of LuxS has been noted to be integral to central metabolism since it contributes to the activated methyl cycle. This paper shows that when Helicobacter pylori LuxS is overproduced in Escherichia coli, it forms cross-linkable multimers. These multimers persist at comparable levels after 24 h of growth if glucose is omitted from the growth medium; however, the levels of extracellular autoinducer-2 decline (Glucose Retention of AI-2 Levels: GRAIL). Glycerol, maltose, galactose, ribose and L-arabinose could substitute for glucose, but lactose, D-arabinose, acetate, citrate and pyruvate could not. Mutations in (i) metabolic pathways (glycolytic enzymes eno, pgk, pgm; galactose epimerase; the Pta-AckA pathway), (ii) sugar transport (pts components, rbs operon, mgl, trg), and (iii) regulators involved in conventional catabolic repression (crp, cya), cAMP-independent catabolite repression (creC, fruR, rpoS,) the stringent response (relA, spoT) and the global carbon storage regulator (csrA) did not prevent GRAIL. Although the basis of GRAIL remains uncertain, it is clear that the mechanism is distinct from conventional catabolite repression. Moreover, GRAIL is not due to inactivation of the enzymic activity of LuxS, since in E. coli, LuxS contained within stationary-phase cells grown in the absence of glucose maintains its activity in vitro.

ACCESSION NUMBER: 2003:214410 BIOSIS
DOCUMENT NUMBER: PREV200300214410
TITLE: Autoinducer 2 activity in Escherichia coli culture supernatants can be actively reduced despite maintenance of an active synthase, LuxS.
AUTHOR(S): Hardie, Kim R. [Reprint Author]; Cooksley, Clare; Green, Andrew D.; Winzer, Klaus
CORPORATE SOURCE: Institute of Infections and Immunity, Queen's Medical Centre, C-Floor, West Block, Nottingham, NG7 2UH, UK

kim.hardie@nottingham.ac.uk
SOURCE: Microbiology (Reading), (March 2003) Vol. 149, No. 3, pp. 715-728. print.
ISSN: 1350-0872 (ISSN print).
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 30 Apr 2003
Last Updated on STN: 30 Apr 2003

L3 ANSWER 9 OF 9 BIOSIS COPYRIGHT (c) 2008 The Thomson Corporation on STN
TI Structural identification of a bacterial quorum-sensing signal containing boron.
AB Cell-cell communication in bacteria is accomplished through the exchange of extracellular signalling molecules called autoinducers. This process, termed quorum sensing, allows bacterial populations to coordinate gene expression. Community cooperation probably enhances the effectiveness of processes such as bioluminescence, virulence factor expression, antibiotic production and biofilm development. Unlike other autoinducers, which are specific to a particular species of bacteria, a recently discovered autoinducer (AI-2) is produced by a large number of bacterial species. AI-2 has been proposed to serve as a 'universal' signal for inter-species communication. The chemical identity of AI-2 has, however, proved elusive. Here we present the crystal structure of an AI-2 sensor protein, LuxP, in a complex with autoinducer. The bound ligand is a furanosyl borate diester that bears no resemblance to previously characterized autoinducers. Our findings suggest that addition of naturally occurring borate to an AI-2 precursor generates active AI-2 . Furthermore, they indicate a potential biological role for boron, an element required by a number of organisms but for unknown reasons.
ACCESSION NUMBER: 2002:164062 BIOSIS
DOCUMENT NUMBER: PREV200200164062
TITLE: Structural identification of a bacterial quorum-sensing signal containing boron.
AUTHOR(S): Chen, Xin; Schauder, Stephan; Potier, Noelle; Van Dorsselaer, Alain; Pelczer, Istvan; Bassler, Bonnie L.; Hughson, Frederick M. [Reprint author]
CORPORATE SOURCE: Department of Molecular Biology, Princeton University, Princeton, NJ, 08544-1014, USA
SOURCE: Nature (London), (31 January, 2002) Vol. 415, No. 6871, pp. 545-549. print.
CODEN: NATUAS. ISSN: 0028-0836.
DOCUMENT TYPE: Letter
LANGUAGE: English
ENTRY DATE: Entered STN: 5 Mar 2002
Last Updated on STN: 5 Mar 2002

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=> s l1 and (DHCP)
L4            0 L1 AND (DHCP)

=> s (DHCP)
L5           53 (DHCP)

=> s l5 and l2
L6            0 L5 AND L2

=> d his

     (FILE 'HOME' ENTERED AT 10:19:49 ON 07 JAN 2008)

     FILE 'MEDLINE, BIOSIS' ENTERED AT 10:21:53 ON 07 JAN 2008
L1           17 S (QUORUM SENSING) AND (INTER SPECIES)
```

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L2             2 S L1 AND (INDUCER)
L3             9 S L1 AND (AI-2)
L4             0 S L1 AND (DHCP)
L5            53 S (DHCP)
L6             0 S L5 AND L2

=> s l1 and l5
L7             0 L1 AND L5

=> s l5 and (quorum sensing)
L8             0 L5 AND (QUORUM SENSING)

=> s l5 and (AI-2)
L9             0 L5 AND (AI-2)

=> s l5 and (auto inducer)
L10            0 L5 AND (AUTO INDUCER)
```

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                  1967-1998
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                  patents
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 NEWS 26  DEC 17  MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary
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               AND CURRENT DISCOVER FILE IS DATED 19 SEPTEMBER 2007.

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=> file medline, scisearch

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=> e phadtare, S/au

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E2	9		PHADTARE SUMANT/AU
E3	0	-->	PHADTARE, S/AU
E4	1		PHADTE N D/AU
E5	1		PHADUNGATH C/AU
E6	9		PHADUNGCHAROEN T/AU
E7	2		PHADUNGCHAROEN THATREE/AU
E8	1		PHADUNGCHEP A/AU
E9	3		PHADUNGCHEWIT Y/AU
E10	1		PHADUNGKIAT SAMPANT/AU
E11	1		PHADUNGKIATWATTANA PODJANEE/AU
E12	2		PHADUNGKIJ S/AU